PARK CITY COUNTY WATER
AND SEWER DISTRICT

FINAL
WASTEWATER
FACILITIES PLAN

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Prepared by:

Neil Consultants, Inc.
516 North Park Avenue, Suite A
Helena, MT 59601

In cooperation with:

The Park City County Water & Sewer District
P.O. Box 14
Park City, MT 59063-0014

SURFACE WATER DISCHARGE AND APPLICABLE REGULATIONS

1. Current

The community of Park City is currently discharges under a "general" MPDES permit for continuous-discharge facultative lagoons. Park City's permit (MTG-580007) requires the District to perform at least monthly monitoring of its effluent quality for BOD_5, TSS, Fecal Coliform and flow rate. Furthermore, it limits BOD_5 to 30 mg/l and TSS to 100 mg/l. There are no current effluent limitations on nutrients or fecal coliform. The District's MPDES permit expired May 31, 1998 and is currently operating under an administrative extension of the permit. This extension will remain until the permit is re-issued. Please see Appendix H for a copy of the MPDES permit.

2. Future

(a) Permit –

The MDEQ is working to re-issue the general permit for discharging facultative treatment lagoons. It is not known exactly when this will take place although it will doubtless be within the 20-year design life of the proposed improvement project. It is anticipated that the BOD_5 limitation will remain at 30 mg/l since this is the standard for secondary treatment. The TSS limitation could be ratcheted down to 30 mg/l depending upon the level of treatment (aerated vs. facultative) the District proceeds with. There may also be annual load limitations for BOD_5 and TSS based on non-degradation. These are discussed in the following section.

(b) Non-Degradation

The purpose of Montana's non-degradation statute (MCA 75-5-303) is to prohibit degradation of high quality state waters, except in certain limited circumstances. The statute is implemented through the Montana Department of Environmental Quality with subchapter 7 of the Administrative Rules of Montana. The goal of the statute is to prevent dischargers from introducing new or increased sources of pollutants to state waters, over and above the amount that was being discharged when the statute was adopted (April 29, 1999). Typical domestic dischargers have the following strategies available to meet the non-degradation provisions:

- Limit community growth so the system's pollutant load as of 4-29-93 is not exceeded.
- Allow community growth and pursue an "Authorization to Degrade" from the MDEQ.
- Allow community growth, but increase pollutant removal capabilities so that annual pollutant loads as of 4-29-93 are not exceeded.
- Allow community growth, but re-direct increased pollutant loads to agricultural land application which is exempt from non-degradation

- Allow community growth, but show that the increased pollutant loadings will not result in impacts to the receiving stream which are above the trigger values in Circular DEQ-7.

In this planning document, only the last three strategies were investigated. The reason for this is that Park City is currently under a hook-up moratorium and there is considerable public pressure to lift the moratorium and allow growth. Therefore, the first strategy is not compatible. The second strategy is dependent upon convincing the MDEQ Non-Degradation Review Committee that over-riding social and economic reasons exist to allow degradation. Since it is not predictable whether these arguments would be successful, this strategy was not considered viable.

In chapter IV, four treatment/disposal alternatives are evaluated which address the last three non-degradation strategies. The first two alternatives (lagoons with wetlands) follow the strategy of removing more pollutants in order to stay below the 4-29-93 levels. The third alternative explores re-directing the increased pollutant loads to an agricultural use. The final alternative evaluates the increased loads, resultant impacts to the receiving stream and makes comparisons to the accepted trigger values in Circular DEQ-7.

In term of implementing the non-degradation rules, non-deg limitations will likely be required for BOD5, TSS, total nitrogen and total phosphorus in the next reissuance of Park City's MPDES permit. The rationale for this is that BOD5, TSS, nitrogen and phosphorus are considered to be pollutants of concern for domestic dischargers to surface water. To gain more thorough information from the MDEQ regarding what those limitations may be, NCI wrote a letter (dated June 29, 1999) on behalf of the District and proposed BOD5, TSS, nitrogen and phosphorus limitations for the upcoming MPDES permit. Please see Appendix C for a copy of this letter. The MDEQ responded in the letter dated July 6, 1999 agreeing that if the expanded facility discharged no greater pollutant load than what it was in April, 1993, then it would not be considered an "increased source" for BOD5, TSS, TN and TP and thus, non-degradation would not apply. The proposed limitations are based on the community's design population and flow rate as of April 29, 1993 (764 people and 76,400 gpd) on the MDEQ policy of 0.028 lb per capita per day for TN and 0.007 lb/cpd for TP. Non-degradation limitations can then be estimated as follows:

BOD_5 = 0.0764(8.34)(30mg/l)(365) = 6,977 lb/yr
TSS = 0.0764(8.34)(100mg/l)(365) = 23,257 lb/yr
TN = 764 persons (0.028 lb/cpd)(365) = 7,808 lb/yr
TP= 764 persons (0.007 lb/cpd)(365) = 1,952 lb/yr

MDEQ's response letter to NCI is included in ***Appendix C***.

As mentioned above, another methodology for satisfying the state non-degradation statute is to show that a permittee's increased pollutant load will not result in measurable impacts to the receiving stream, i.e.: increases above the trigger values.

In Park City's case, this is a strategy worth evaluating since the Yellowstone is a large receiving stream and dilution will be considerable. In order to show that impacts would be minimal, a simple load calculation must demonstrate that the increased pollutants do not increase ambient concentrations of total nitrogen or total inorganic phosphorus by more than the trigger values in Circular DEQ-7. Trigger values for TN and TP are 10 µg/l and 1µg/l, respectively.

(c) Total Maximum Daily Load

A Total Maximum Daily Load or "TMDL" is a method by which currently impacted water bodies can be enhanced through pollutant load reductions. If a specific waterbody is not meeting its intended uses as a result of pollutant discharges, the MDEQ is required to develop a TMDL for each pollutant which is causing the impairment. Once the TMDL is established, the next step is to implement the TMDL by limiting the amount of pollutant that is being introduced into the impaired stream. This can be done by placing pollutant limitations on permittees that discharge to the stream, by implementing "best management practices" for non-point dischargers to the stream, or by a number of other methods. NCI staff questioned a state TMDL specialist and also the MPDES permit section head regarding the imposition of TMDL-based permit limitations. According to the testimony of the state personnel, it is unlikely that TMDL limitations would be imposed on Park City, at least within the 20-year planning period. The MDEQ is required to establish TMDL's for all of Montana's water bodies within 10-years. One of the first steps necessary to establish TMDL's is that a record of ambient samples must be collected and used to develop a model of the receiving stream. These efforts ordinarily take at least 10 years to accomplish. Furthermore, Park City is a relatively small discharger to the Yellowstone and would likely not be one of the first targets for TMDL-based limitations. Finally, dischargers have no more than 2 permit cycles (10-years) to meet the limitations. This establishes compliance very near the 20-year planning time-frame.

The strong probability that Park City would not be subject to TMDL-based permit limitations, and the litany of unknowns about what those limitations might be makes it impractical to predict and plan for such limitations at this point. In the event that the state's progress toward establishing a Yellowstone TMDL accelerates, it would be wise for Park City to choose an improvement alternative which allows expansion and addition of further treatment processes.

(d) Vandenberg Drain Ditch – State Waters

In 1999, during the planning process for improvements to Park City's wastewater system, the MDEQ determined that the Vandenberg Drain has been historically mis-classified. Park City has discharged treated effluent into the ditch since the facility was constructed in 1968 and the ditch was considered a conveyance for effluent to the Yellowstone River. It was not considered a "state water." However, in written responses from the MDEQ regarding upcoming permit issues, representatives have

stated that Vandenberg ditch should be protected as a state water under Montana statute. Please see the 8-25-99 letter from Fred Shewman and the 12-7-99 facility plan review letter from Todd Teegarden in Appendix "C". On November 30, 1999, NCI met with MDEQ representatives to discuss the Vandenberg Drain issue on behalf of the District. The conclusions reached at this meeting are expressed in item #5 of the MDEQ's draft facilities plan review letter of 12-7-99. The letter states: "the (Vandenberg) Drain will be considered state waters because it has groundwater in it and is not strictly dedicated to convey Park City's discharge. This interpretation is different than in the past and means the District's new discharge permit to the Ditch will need to meet water quality standards and specifically the new permit will have fecal and ammonia limits".

As a result of the MDEQ's determination, the recommended alternative in the December draft facilities plan – aerated treatment, disinfection and discharge to the Vandenberg Drain – has been judged impractical. This is because the proposed treatment technology is not capable of meeting ammonia standards for the protection of aquatic life. With minimal dilution provided by water in the ditch, the facility would need to produce effluent with ammonia concentrations of less than 1.0 mg/l during certain times of the year. This is very difficult to achieve consistently in Montana climates with conventional treatment technologies.